DOCUMENT RESUME

ED 477 480 PS 031 346

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TITLE	English Literacy Levels of the Early Care and Education Workforce: A Profile and Associations with Quality of Care. Who Leaves? Who Stays? A Longitudinal Study of the Early Care and Education Workforce in Alameda County, California.
SPONS AGENCY	Administration on Children, Youth, and Families (DHHS), Washington, DC. Child Care Bureau.; A.L. Mailman Family Foundation, Inc.; Foundation for Child Development, New York, NY.
PUB DATE	2003-00-00
NOTE	13p.; Produced by the Institute of Industrial Relations. Center for the Study of Child Care Employment.
AVAILABLE FROM	Center for the Study of Child Care Employment, Inst. of Industrial Relations, University of California at Berkeley, 2521 Channing Way, #5555, Berkeley, CA 94720-5555. Tel: 510-643-7091; Fax: 510-642-6432; Web site: http://www.iir.berkeley.edu/cscce. For full text: http://www.iir.berkeley.edu/cscce/english.pdf.
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Caregiver Training ; *Child Caregivers; Early Childhood Education; Educational Environment; Emergent Literacy; English; *Influences; *Literacy; *Preschool Teachers; Research Needs; Teacher Education; Teacher Qualifications; Workplace Literacy; *Young Children
IDENTIFIERS	Caregiver Qualifications; Nonnative Speakers

ABSTRACT

Research on parents has shown the critical contribution that linguistic input plays in fostering early literacy, but there have been no systematic studies of the literacy of the early care and education workforce and its role in fostering quality early learning environments. This report examines the literacy levels of early childhood educators in Alameda County, California, providing initial evidence bearing on the important but missing link between adult English literacy skills and children's literacy environments. Subjects were 98 teachers and providers including teachers in Head Start, public preschools and child care programs as well as licensed family child care providers; 31% did not speak English as their native language—although all used English in their child care settings. Subjects completed the document literacy scale from the Tests of Applied Literacy Skills (TALS). Three major findings emerged. First, the English literacy skills reflected in the sample ranged from "highly proficient" to "extremely limited". The average score of 296 is higher than the national average of 167, but nearly one-third scored within the "limited proficiency" range. Second, the English literacy levels of child care teachers and providers are significantly associated with the language interactions, literacy environments and quality of caregiving they offer to young children; nevertheless, nearly half of the teachers and providers with minimal to poor English literacy skills worked in settings that provided young children with

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rich early language environments. Third, the English literacy levels of child care teachers and providers, as with other sectors of the work force, are significantly associated with their linguistic, ethnic, and educational background, and with their wages. It appears that working in a center accentuates the link between the English literacy skills of any given teacher and the quality of children's overall literacy environment. When the quality of adult-child interactions specific to the teacher or provider was the focus of observation, the researchers were unable to identify the factors that enable adults with relatively poor English literacy skills to offer high-quality early education. Findings pose implications for teacher/provider training and for future research. (Contains 32 references.) (HTH)

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CENTER FOR THE STUDY OF CHILD CARE EMPLOYMENT

Who Leaves? Who Stays?

English Literacy Levels of the Early Care and Education Workforce: A Profile and Associations with Quality of Care

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Introduction

Enhancing the early literacy of the nation's children is now a goal shared by parents, educators and policymakers alike. Fundamental to this goal is a workforce of early childhood educators who are themselves literate: able to become well-informed about child development, to organize learning strategies for young children, to assess children's progress, and to offer the language-rich environments in which children thrive.

Whether they are parents or early childhood educators, adults play a pivotal role in children's acquisition of language and literacy skills. Reading acquisition is a process that begins early in the preschool years, and the variety of children's early experiences accounts for the fact that they arrive at school with vastly differing degrees of knowledge and skill pertaining to literacy (National Research Council, 1998). These early differences are strongly predictive of later reading abilities and disabilities (Scarborough, 1998; 2002; Whitehurst & Lonigan, 2002). Indeed, a recent study has linked the quality of children's preschool experiences to their reading abilities at the end of fourth grade (Roach & Snow, 2000).

Research on parents has shown the critical contribution that linguistic input plays in fostering early literacy (Dickinson & Tabors, 2001; Hart & Risley, 1995; Hoff, forthcoming; Huttenlocher et al., 1991; Hoff-Ginsberg, 1991). Similar findings have emerged from research on child care, which has pointed to the language environment of early childhood programs as the essential "quality ingredient" predicting the language and cognitive test scores of children in child care (Dickinson & Smith, 1994, 2001; McCartney, 1984; NICHD ECCRN, 2000). Developmentally supportive environments are rich in adult-child verbal interaction and reading, engage children in give-and-take conversations that allow them to practice their verbal skills, and offer constructive models of adult language, reading and learning towards which to aspire. High-quality preschool classrooms have been found to have particularly positive effects on the pre-literacy skills of children whose parents have low levels of literacy (Greenberg, Franze, McCarty & Abbott-Shim, 2000).

Yet there have been no systematic studies of the literacy of the early care and education workforce and its role in fostering the early learning environments that the nation's political, economic and education leaders are calling for so urgently. It is a small leap to speculate that the quality of caregiver-child verbal interactions and literacy-building activities would be affected by the adult's language and literacy skills. This report, which examines the literacy levels of early childhood educators in Alameda County, California, provides initial evidence bearing on the important but missing link between adult English literacy skills and children's literacy environments.

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Sample

The sample for this literacy assessment came from a cohort of child care teachers and providers working with infants, toddlers and preschoolers in Alameda County, California, including teachers in Head Start, public preschools and child care programs, as well as licensed family child care providers. To assess whether the WLWS sample was reasonably representative of child care centers and licensed homes in Alameda county, we compared our sample demographics to those of other samples also collected during the first half of 2001 (Whitebook et al., 2002, 2003). By design, the WLWS sample included a larger proportion of contracted centers serving subsidized children than is found in the county at large. Contracted centers are required to adhere to more stringent regulations governing staff qualifications than either for-profit or non-contracted nonprofit programs, and thus the workforce represented across all of these studies may have higher levels of education and early childhood-related training than that found in the community at large. The characteristics of WLWS centers closely reflect those of centers and staff participating in the two comparison samples. The home licensed providers in the WLWS sample were more likely to be Latina and were better educated than those in the California Child Care Workforce Study (Whitebook et al., 2002). Taken as a whole, the WLWS sample is comprised of more highly-educated teachers than the other studies, which should be considered when interpreting the results presented in this report.

The sample of 98 teachers and providers who took the English literacy test was 34% non-Hispanic White, 25% African American, and 20% Hispanic/ Latino. Their average age was 42 years, and their educational levels ranged from a high school degree or less (14%) to some college (no degree, 37%, 2-year degree, 18%) to a four-year college degree or more (31%). Thirty-one percent of participants did not speak English as their native language. Although they varied in their primary language, all spoke used at least some English in their classrooms: English only (56%), English and Spanish (29%), or English and at least one other language (15%) in their classroom or child care home.

Measures

The teachers and providers were given the document literacy scale from the Tests of Applied Literacy Skills (TALS), developed by the Educational Testing Service to assess performance on English literacy tasks that adults typically encounter at home, at work, and in day-to-day activities. It is based on a definition of adult literacy that emphasizes the use of printed and written information to function in society, and to develop one's knowledge and potential, as distinct from literacy assessed with school-based reading tests. Because of the many primary languages spoken by study participants and the lack of available standardized literacy assessments in languages other than English, we focused on participants' skills in reading and interpreting English, rather than their literacy in their primary language.

The documents scale of the TALS assesses "the knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables, indexes and so forth" (Kirsch, Jungeblut & Campbell, undated). These skills are relevant to being familiar with child care regulations and safety procedures, participating in training (including online training), finding information in a phone book or through written materials (e.g., written emergency procedures), and completing forms (e.g., Individual Education Plans, forms required by the state for child care subsidy recipients, and small business and tax forms). This scale does not, however, assess prose literacy, namely "the knowledge and skills needed to understand and use information from texts including news stories and fiction" (Kirsch et al., undated), nor does it assess spoken language skills.

Scores on TALS scales represent five literacy levels, with Level 1 representing the lowest level and Level 5 the highest. Levels 1 (scores of 0-225) and 2 (scores of 226-275) represent limited literacy proficiency. Level 3 (scores of 276-325) is considered the minimum literacy level needed for success in today's labor market (Sum, Kirsch & Taggart, 2002). Levels 4 and 5 represent successively higher levels of literacy. The mean score on the documents scale for a large, nationally representative sample of U.S. adults is 267 (sd=111) (Sum et al., 2002).

Since 31% of this study's participants did not speak English as their native language – although all used English in their child care settings – some caution is necessary regarding the relative adequacy of the TALS

for capturing the broader literacy skills of non-native English speakers, the relationship between non-English literacy and quality of care, and whether and how the use of English by non-native English speakers affects their verbal interactions with children. The role of teachers' and providers' native language as a support or barrier to providing rich language environments for young children with differing language backgrounds is a broad issue that warrants further study.

Quality of care was measured using on-site observations of the quality of adult-child interactions, including language interactions, and the overall quality of the environment, including the quality of the learning opportunities provided to the children. The Early Childhood Environment Rating Scale (ECERS-R) (Harms, Clifford & Cryer, 1998), the Infant-Toddler Environment Rating Scale (ITERS) (Harms, Clifford & Cryer, 1990) and the Family Day Care Environment Rating Scale (FDCRS) (Harms & Clifford, 1989) assess the overall environment in the classroom or home setting, including caregiver-child interactions and the program's materials and curriculum. For these analyses, we used the four-item Language and Reasoning Subscale on the ECERS-R and FDCRS and the two-item Listening and Talking Subscale on the ITERS; these were the only subscales of the ECERS, FDCRS, and ITERS that were significantly correlated with literacy scores on the TALS. The Arnett Scale of Caregiver Behavior assesses the caregiver's interactions with the group of children in her care (Arnett, 1989). The Child-Caregiver Observation Score, Revised (C-COS-R) assesses the caregiver's one-on-one interactions with individual children (modified by Mathematica Policy Research from NICHD ECCRN, 1996).

Major Findings

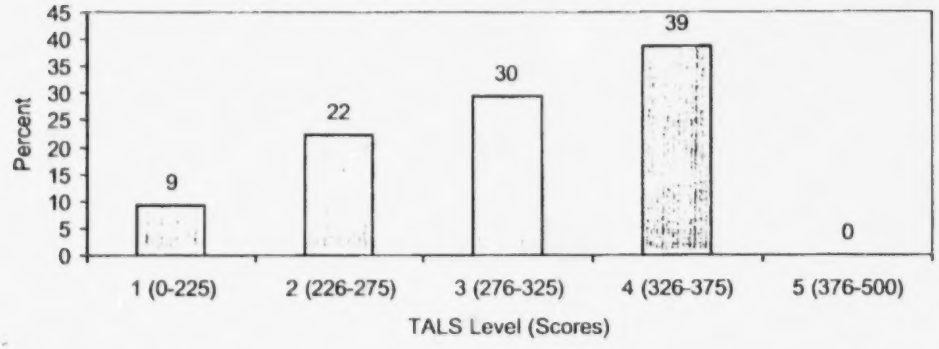
Previous studies have shown wide variability in the quality of early care and education programs in the U.S., and its troubling implications for children's development (Whitebook, Sakai, Gerber & Howes, 2001; Burchinal et al., 2000; NICHD ECCRN, 1996, 2000; Peisner-Feinberg & Burchinal, 1997; Phillips, Voran, Kisker, Howes & Whitebook, 1994; Whitebook, Howes & Phillips, 1990). The current study extends this general conclusion to the literacy levels of the adults working in such programs. Three major findings emerged:

- The English literacy skills reflected in this sample of child care teachers and providers varied widely, from "highly proficient" to "extremely limited" (see Figure 1.) The average TALS score of 296 (sd=53) is higher than the national average of 267 (sd=111) (found in the National Adult Literacy Survey[1]), but nearly one-third (31%) scored within the "limited proficiency" range (levels 1 and 2). These lowest scores represent deficient literacy skills for any adult, a troubling finding in a workforce bearing significant responsibility for the early development of the nation's children.

- The English literacy levels of child care teachers and providers are significantly associated with the language interactions, literacy environments and quality of caregiving they offer to young children. Nevertheless, nearly half (48%) of teachers and providers with minimal to poor English literacy skills worked in settings – particularly center-based settings – that provided young children with rich early language environments.[2]

- The English literacy levels of child care teachers and providers, as with other sectors of the workforce, are significantly associated with their linguistic, ethnic and educational backgrounds, and with their wages.

Figure 1 TALS Levels for Child Care Teachers and Providers in Alameda County



Note: Only 4 percent of the national sample in the National Adult Literacy Survey scored at level 5 (Sum, 1999).

What Accounts for Variation in Literacy?

It is critical to understand why a substantial minority of teachers and providers did so poorly on the literacy assessments, while others demonstrated relatively high levels of proficiency. Although this study does not allow us to identify *causes* of lower and higher literacy levels, we were able to investigate associations between literacy levels and: (1) primary language of the provider, (2) ethnicity of the provider, (3) wage per hour, (4) whether the provider was center-based or home-based, (5) subsidy status of the provider (i.e., whether or not receiving any kind of government funding for providing child care services), (6) education level of the provider, (7) amount of credit-bearing specialized training of the provider, (8) age of the provider, (9) years in the child care field, and (10) sufficiency[3] of the provider's household income. As a group, these variables explained over one-third of the variation in the teachers' and providers' literacy scores (R^2=.37).

The predictors that remained significant when the influence of all other predictors was controlled were: (1) having a primary language other than English,[4] (2) ethnicity, (3) education level, (4) wages and (5) center- or home-based setting. The literacy levels of providers characterized by differing primary languages, ethnicities and education levels are shown in Figures 2 through 4. Non-English speaking and African American teaching staff and providers, as well as those earning lower wages, had significantly poorer English literacy skills as assessed by the TALS document scale. Teachers and providers with a primary language other than English had TALS scores averaging 50 points lower than native English-speaking teachers and providers, as did African Americans in comparison to non-Hispanic Whites.

Teachers and providers with a high school education or less had adjusted mean TALS scores that were significantly lower than those with at least some college, as is also the case in a nationally representative sample (Sum, 1999). As shown in Figure 4, those with low levels of education had English literacy scores that were 34 and 35 points lower than those with moderate and high levels of education, respectively. The distribution of TALS scores across levels 1-5 for child care teachers and providers with differing levels of education also mapped closely onto national data reflecting the full spectrum of occupations (Sum, 1999).

With respect to wages, each ten-percent increase in hourly wage was associated with a 1.5-point rise in TALS scores. These data do not allow us to distinguish whether providers with higher literacy skills are able to negotiate higher wages, programs paying higher wages attract more literate providers, or higher-wage positions are accompanied by opportunities to increase English literacy skills.

The adjusted average English literacy scores of home-based providers and center-based teaching staff also differed significantly. The average TALS scores for home- and center-based child care teachers and providers were 307 and 290, respectively. However, both groups spanned the literacy range from level 1 to level 4.

Figure 2 Adjusted Mean TALS Document Scores by Primary Language of Teacher/Provider

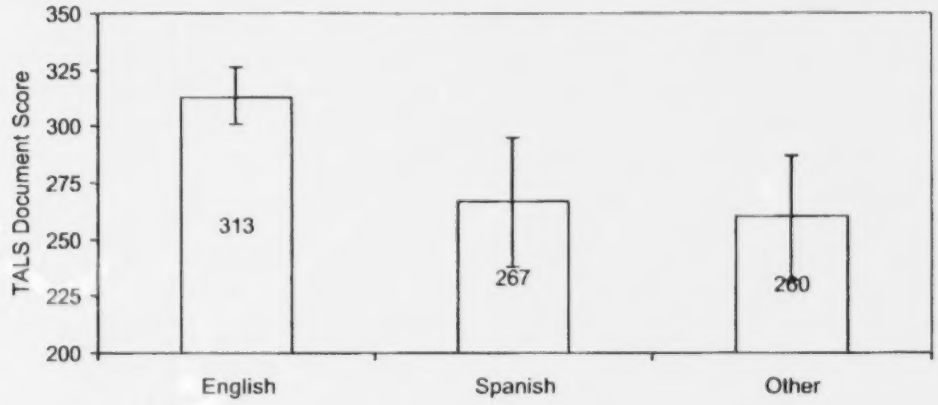


Figure 3 Adjusted Mean TALS Document Score by Ethnicity of Teacher/Provider

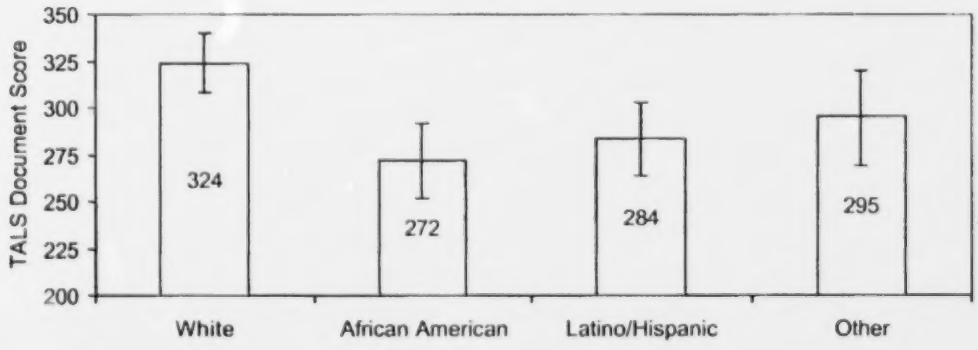
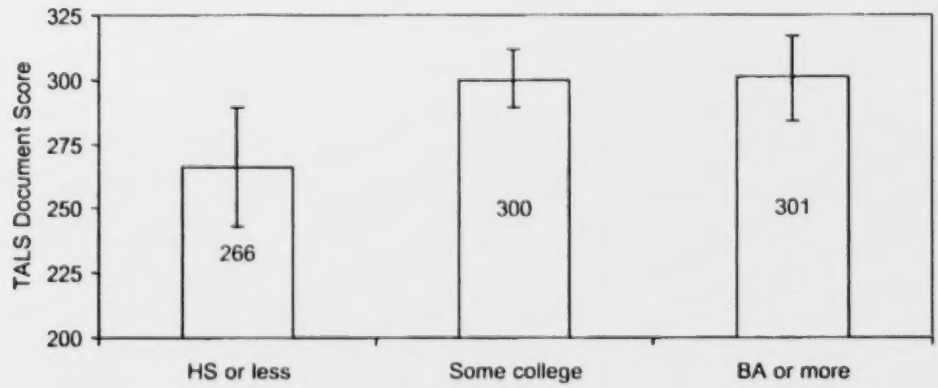


Figure 4 Adjusted Mean TALS Document Scores by Education Level of Teacher/Provider



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English Literacy and the Quality of Care

As might be expected, we found that higher English literacy skills among child care teachers and providers were positively associated with offering higher-quality care to young children. But despite this finding, we found that a sizeable share of teachers and providers with lower English literacy skills also provided, and/or worked in settings that provided, high-quality care. Adult literacy levels are thus one of a matrix of characteristics that affect the quality of care programs.

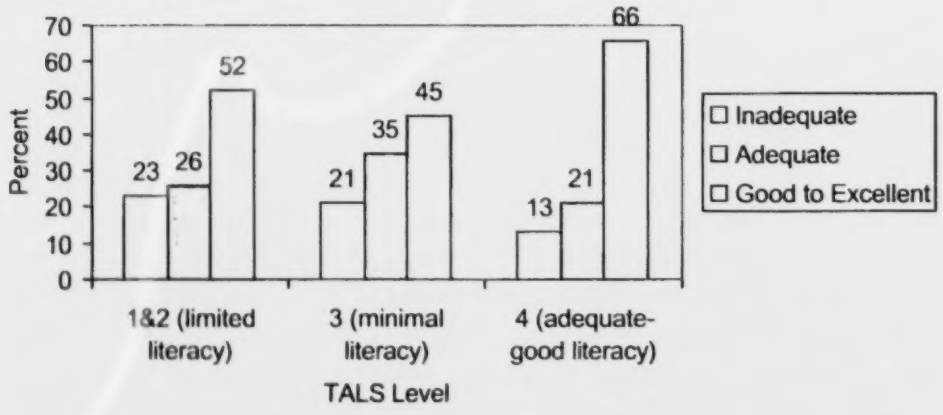
Each of the three quality assessments used in this study revealed a positive association between adult literacy and child care quality. Center-based child care teachers and home-based providers with higher English literacy, notably two-thirds of those who scored at Level 4 (considered above "minimal literacy") provided good-to-excellent language environments (scores of 5 or above on the ECERS-R, ITERS, or FDCRS) compared to 48 percent of their counterparts whose scores placed them at the "minimal" or "limited" literacy level. They spent more time in reading and pre-reading activities, provided children with a wider selection of age-appropriate books, and engaged in more give-and-take communication with the children. Moreover, the English literacy levels of child care teachers and providers predicted quality of care – specifically the quality of the literacy environment in child care centers and homes – above and beyond the influence of their educational levels.

At the same time, a sizeable share (48%) of teachers and providers with lower English literacy levels (in the minimal range or below, N=29) also worked in settings that offered good-to-excellent language environments, and provided developmentally supportive and attentive care to young children.

To better understand the conditions under which teachers and providers with more limited literacy skills provide good-quality care, we investigated associations between the quality of the child care language environment and nine independent variables: (1) ethnicity, (2) primary language, (3) wages, (4) income sufficiency, (5) education level, (6) type of care (center or home-based), (7) amount of credit-bearing specialized training, (8) supervised practicum experience, and (9) receptive vocabulary (scores on the Peabody Picture Vocabulary Test) for this subgroup. Only "type of care" showed a significant association with the quality of the language environment. Center-based teachers with minimal to poor English literacy had a 14% greater chance of working in programs with higher-quality language environments than did home-based providers.

This result clearly warrants more focused examination. Center-based environments, as compared to home settings for child care, may offer more supports for literacy (e.g., possibly more literate co-teachers and/or center directors, greater training opportunities, and materials that contribute to a higher-quality language

Figure 5 Language Environment Scores by TALS Level on Document Scale



Note: Language Environment Scores are from the Language and Reasoning Subscale of the ECERS-R and the FDCRS, and the Listening and Talking subscale of the ITERS. Inadequate is defined as scores below 3 on these subscales, Adequate as 3-4.99, and Good to Excellent as 5 and above.

environment) that can compensate for the literacy skills of any given teacher. Our data lend some support to this hypothesis: the percentage of center teaching staff with a college degree or more was significantly associated with higher-quality language environments for teachers with low English literacy.

These findings supplement prior evidence linking children's early language and cognitive development to their literacy environments in child care by identifying teachers' and caregivers' own English literacy skills as an important, though far from isolated, aspect of their capacity to establish a developmentally beneficial literacy environment. They also raise important questions about the conditions under which literacy levels do not interfere with providing language-rich child care environments. It appears that working in a center attenuates the link between the English literacy skills of any given teacher and the quality of the children's *overall* literacy environment. When the quality of adult-child interactions specific to the teacher or provider in our study was the focus of observation, however, we were unable to identify the factors that enable adults with relatively poor English literacy skills to offer high-quality early education.

Implications of Findings

Implications for Training

Available models for training early childhood teachers and providers rely heavily on printed materials that may, unwittingly, pose a substantial barrier to a sizeable sector of this workforce. To enhance and extend the success of these efforts:

(1) Initiatives aimed at improving pre-literacy practices within early childhood programs should take into account the literacy levels of trainees, ensuring that all materials are presented in a manner that teachers and providers can access, understand, and utilize with the children in their care.

(2) Training models should be developed to incorporate the native languages of child care teachers and providers, many of whom are caring for children who do not speak English primarily or exclusively. These models might involve elements of adult literacy in English, but in the absence of multilingual training, opportunities to help teachers and providers create language-rich environments for young children may be lost.

(3) Pre-literacy initiatives should be extended beyond Head Start and state-funded prekindergarten programs to encompass the full array of child care practitioners, with particular attention to home-based providers.

Implications for Research

This small-scale study of the English literacy of the early care and education workforce in one California county will hopefully spur similar efforts in other parts of the country, if not a full-scale national study. Among the unexplored issues the results raise, those related to interrelations among language, culture and literacy stand out as most significant. We therefore suggest the following directions for future research:

(1) National data on the English literacy of the early care and education workforce should be collected, comparable to available data on other professional groups (Sum, 1999). These data should encompass all types of care (e.g., centers, licensed family child care homes, and arrangements that are exempt from regulation).

(2) In light of the extensive and growing language diversity of children in early care and education programs, research in this area must extend beyond assessments of English literacy to encompass questions regarding, for example: (a) the non-English literacy levels of teachers and providers who do not use English only in their child care settings and/or do not have English as their native language, and (b) the relation between both English and non-English literacy and the quality of the literacy and educational experiences provided to non-English speaking children.

(3) Although this study focused on functional literacy as it pertains to documents, other aspects of literacy (e.g., book reading) and oral language remain cornerstones of good early childhood practice. Language-rich environments depend

heavily on reading and verbal communication between young children and those who care for them. There is a need to better understand the independent and joint roles played by these differing components of literacy as they influence the quality of children's language environments in early care and education settings and, ultimately, affect the development of pre-literacy skills.

(4) The lower English literacy levels of African American teachers and providers is troubling, particularly given that it is not an isolated finding. In the current study, this association was not attributable to differences in years of education, native language or income, as these variables were controlled in all analyses. Research that explores more complex reasons for this gap in English literacy (e.g., factors related to the nature of the test or the test-taking conditions, more subtle educational factors, and cultural differences in exposure to materials and experiences that are presently used as markers of literacy) should be of high priority.

In light of the tremendous learning that occurs during the preschool years and the nation's commitment to ensuring that all children enter school ready to learn, it is time to acknowledge and address the highly variable English literacy skills of those upon whose shoulders the successful attainment of this goal depends. Universal prekindergarten and other early learning programs are proliferating, as are programs and materials aimed at providing young children with the pre-literacy skills that elementary schools now expect them to have acquired. The question posed by the current study is whether the nation is prepared to support – through appropriate training, compensation and program assistance – an early care and education workforce that is capable of implementing these programs and sustaining the progress they make towards preparing young children for school.

The authors wish to thank the following individuals who reviewed earlier drafts of this paper and provided much useful insight and guidance: David Dickinson, Bob French, Kathy Hirsch-Pasek, Patty Hnatiuk, Luba Lynch, Kathleen McCartney, Dora Pulido-Tobiassen, Steve Reder, John Strucker, Ruby Takanishi, and Fasaha Traylor. In addition, many thanks are due to Irwin Kirsch who assisted us in the use and interpretation of The Tests of Applied Literacy Skills.

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[1] The National Adult Literacy Survey, funded by the National Center for Education Statistics tested a nationally representative random sample of 24, 944 adults ages 16 and older living in the United States in 1992 (Sum, 1999).

[2] Limited adult English literacy skills do not inevitably interfere with providing high-quality early language environments or sensitive caregiving. In particular, children who received care from less English-literate teachers in center-based arrangements, surrounded by other adults and richer resources than most home care settings are able to offer, were more likely than their peers in licensed child care homes to be exposed to pre-literacy activities, books and other experiences that foster language development. We were less successful in identifying the individual characteristics of teachers and providers who were able to offer positive language interactions to children despite having limited English proficiency. It is plausible that those who are highly literate in their native languages, and may be trained in child development in these languages as well, are entirely capable of providing strong pre-literacy environments despite lower levels of English literacy.

[3] Sufficient income is defined as meeting a county-specific standard that ensures only the minimum that heads of working families need in order to meet their basic needs without public subsidies or private/family assistance (Pearce, 2000). Factors taken into account when computing sufficient income include total household income, age and number of household members, and area cost of living.

[4] Other languages include Spanish, Mandarin, Punjabi, Urdu, German, Tagalog, Korean, Cambodian, Amharic, Igbo, Farsi, Hausa, Gujarati and Portuguese.

Who Leaves? Who Stays? A Longitudinal Study of the Early Care and Education Workforce in Alameda County, California was funded by the Administration for Children and Families, Child Care Bureau, U.S. Department of Health and Human Services; by the A.L. Mailman Family Foundation, Inc.; and by the Foundation for Child Development. Results reported from this research represent the opinions, conclusions and recommendations of the authors, not of the funders.

For more information about *Who Leaves? Who Stays?*, please contact Marcy Whitebook at mwhbk@uclink.berkeley.edu or visit http://www.iir.berkeley.edu/cscce.

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